USDA Oregon Technical Advisory Committee
February 16, 2017

NRCS hydrologists sample low elevation snow in the Owyhee Basin where mountain snowpack has already surpassed its normal annual peak.

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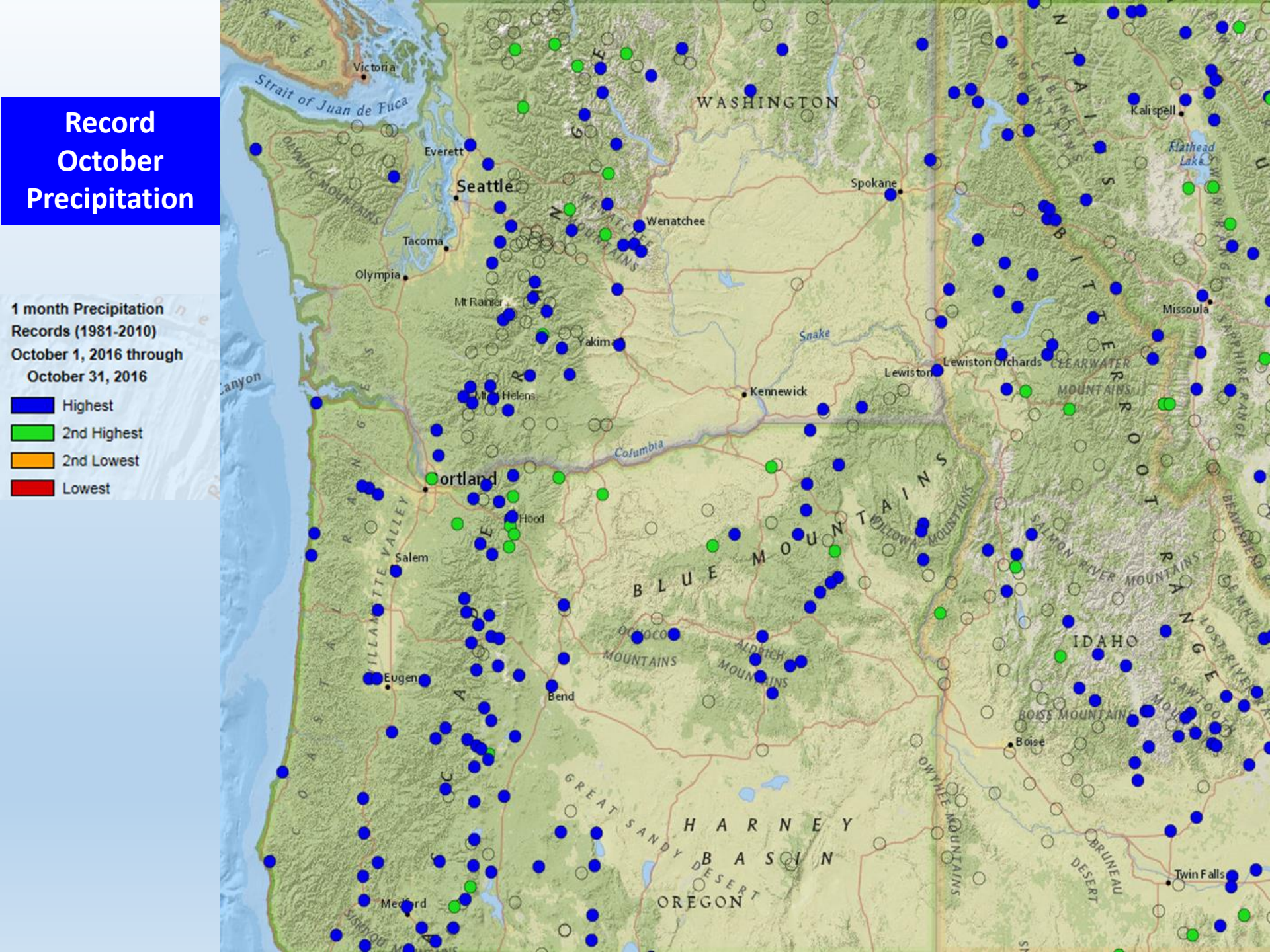
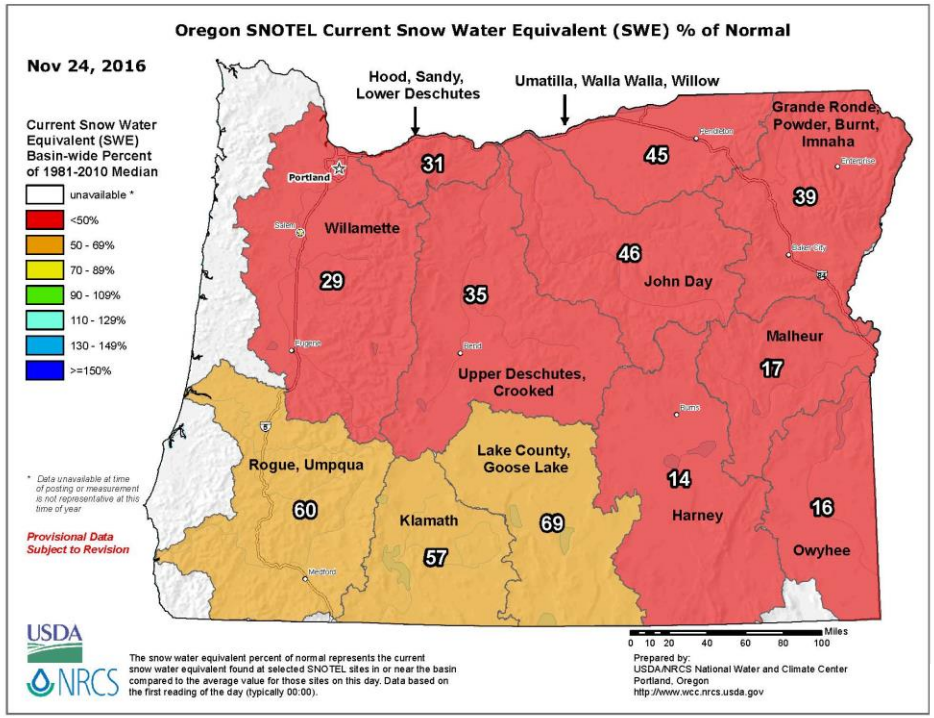
Oregon 2017 Water Supply Conditions Update

- Overview of Water Year Snow and Precipitation
- Drought Monitor Status
- NOAA Extended Forecasts
- Summary of Low Elevation Snowpack in E. Oregon

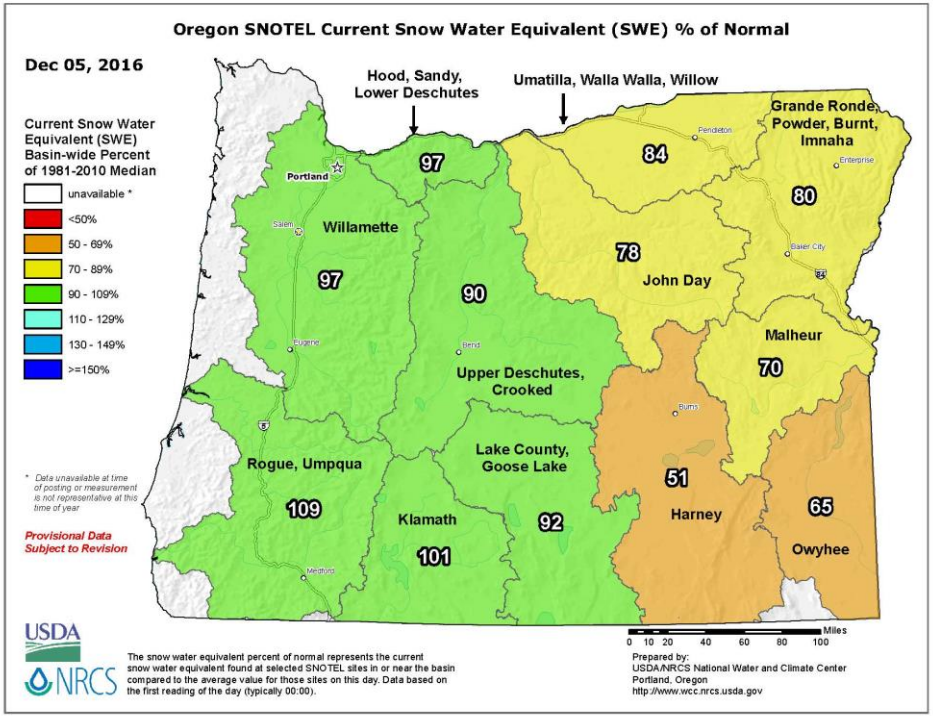
Record October Precipitation



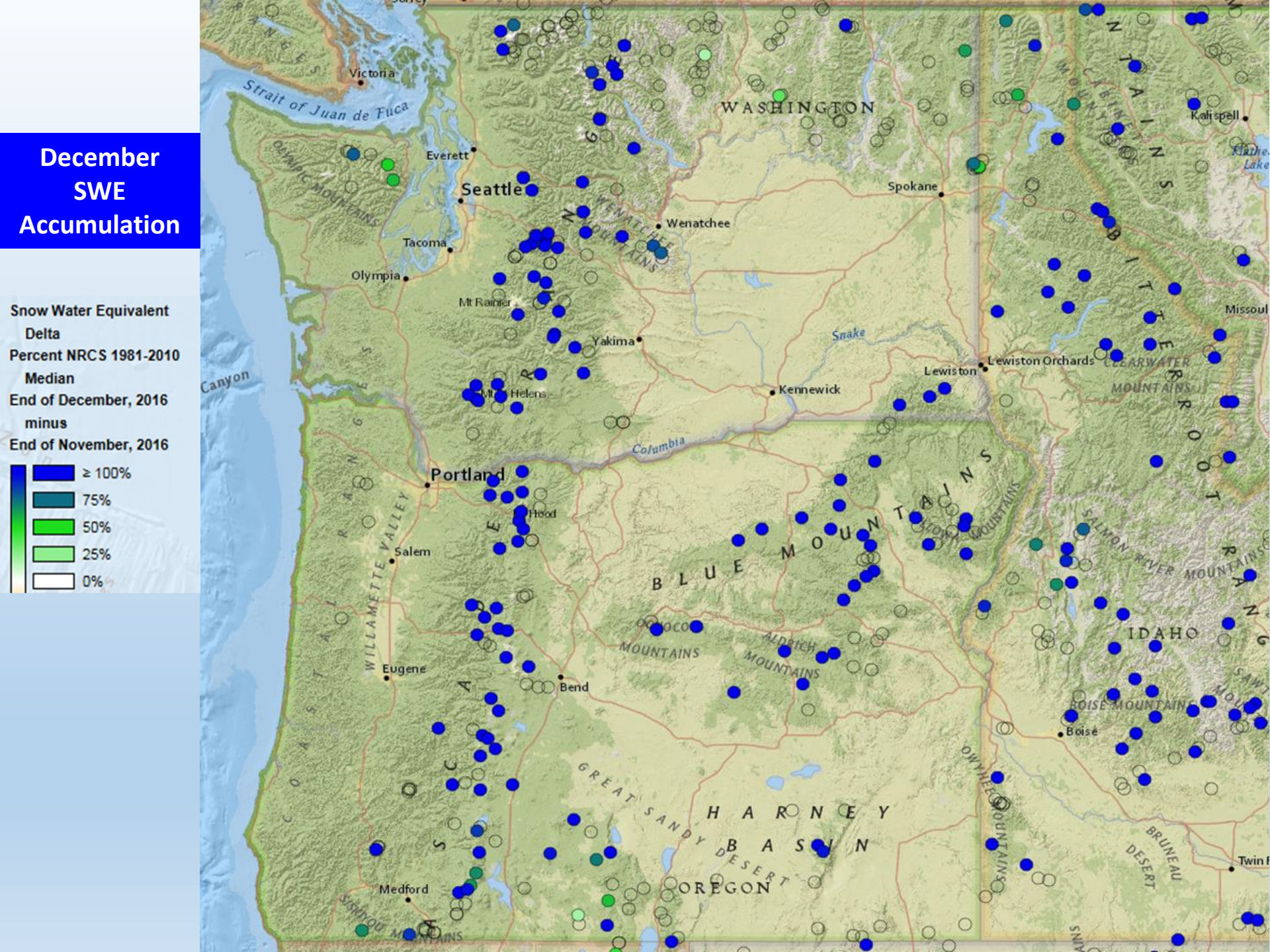


Thanksgiving 2016

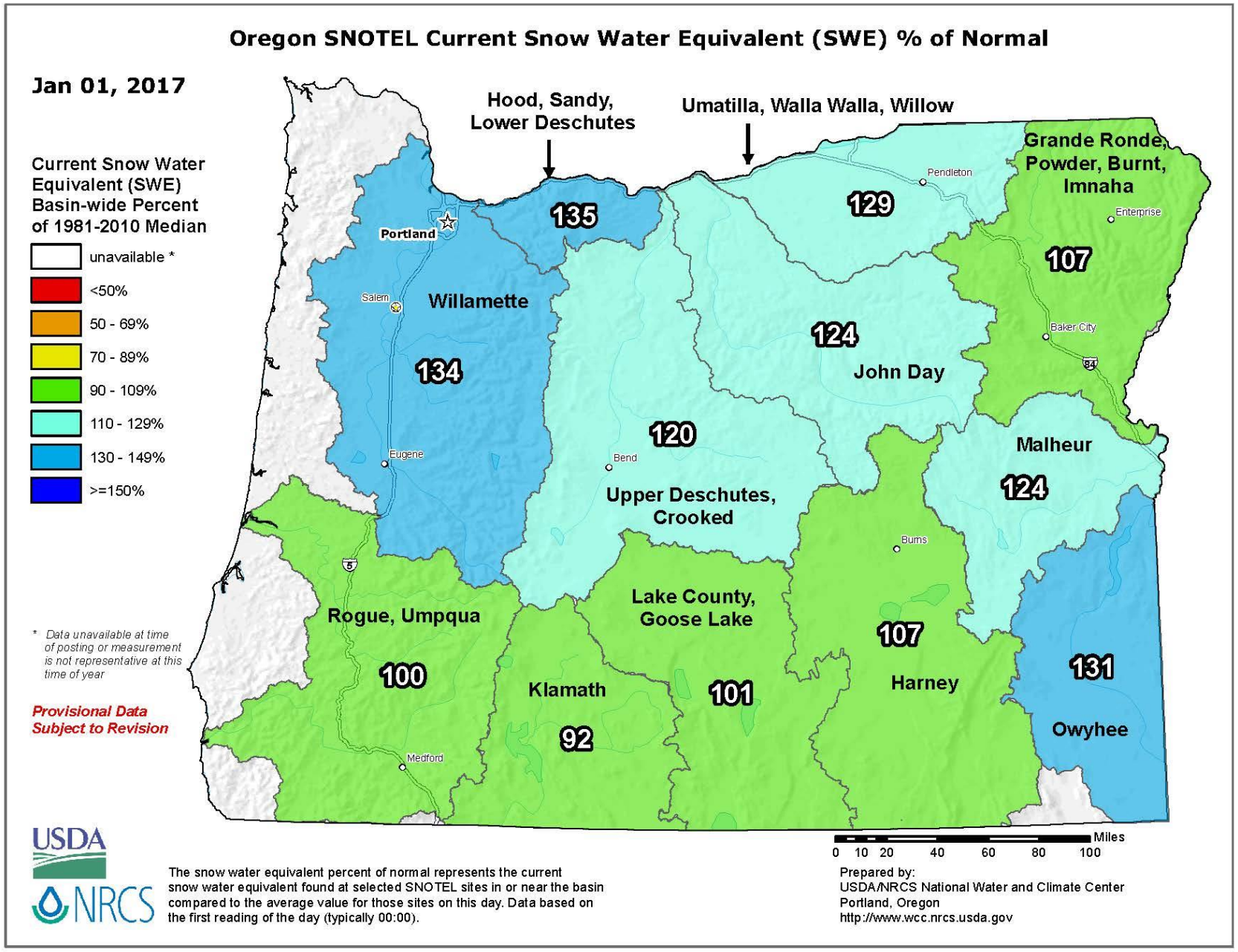
December 5, 2016



December SWE Accumulation

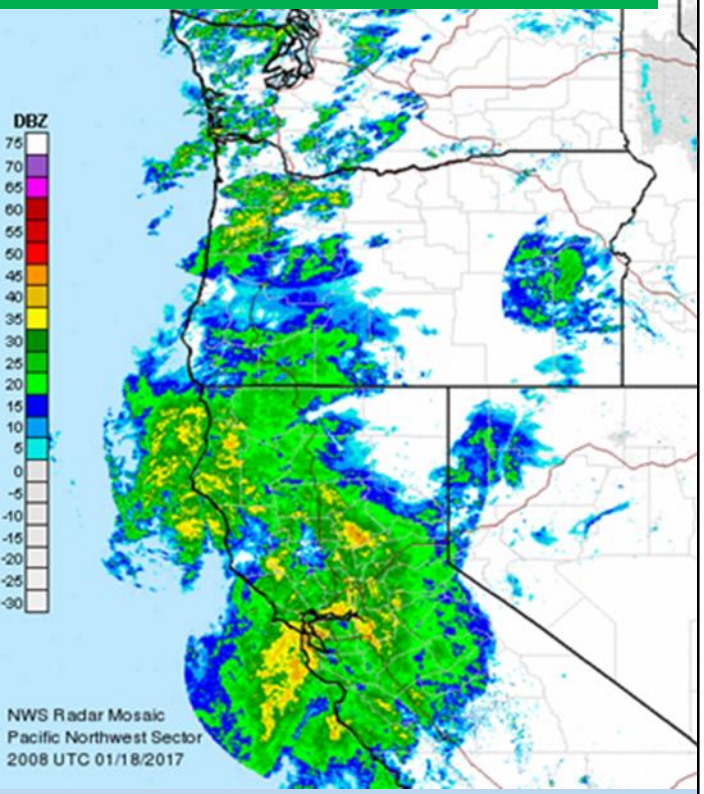


January 1, 2017 Snowpack



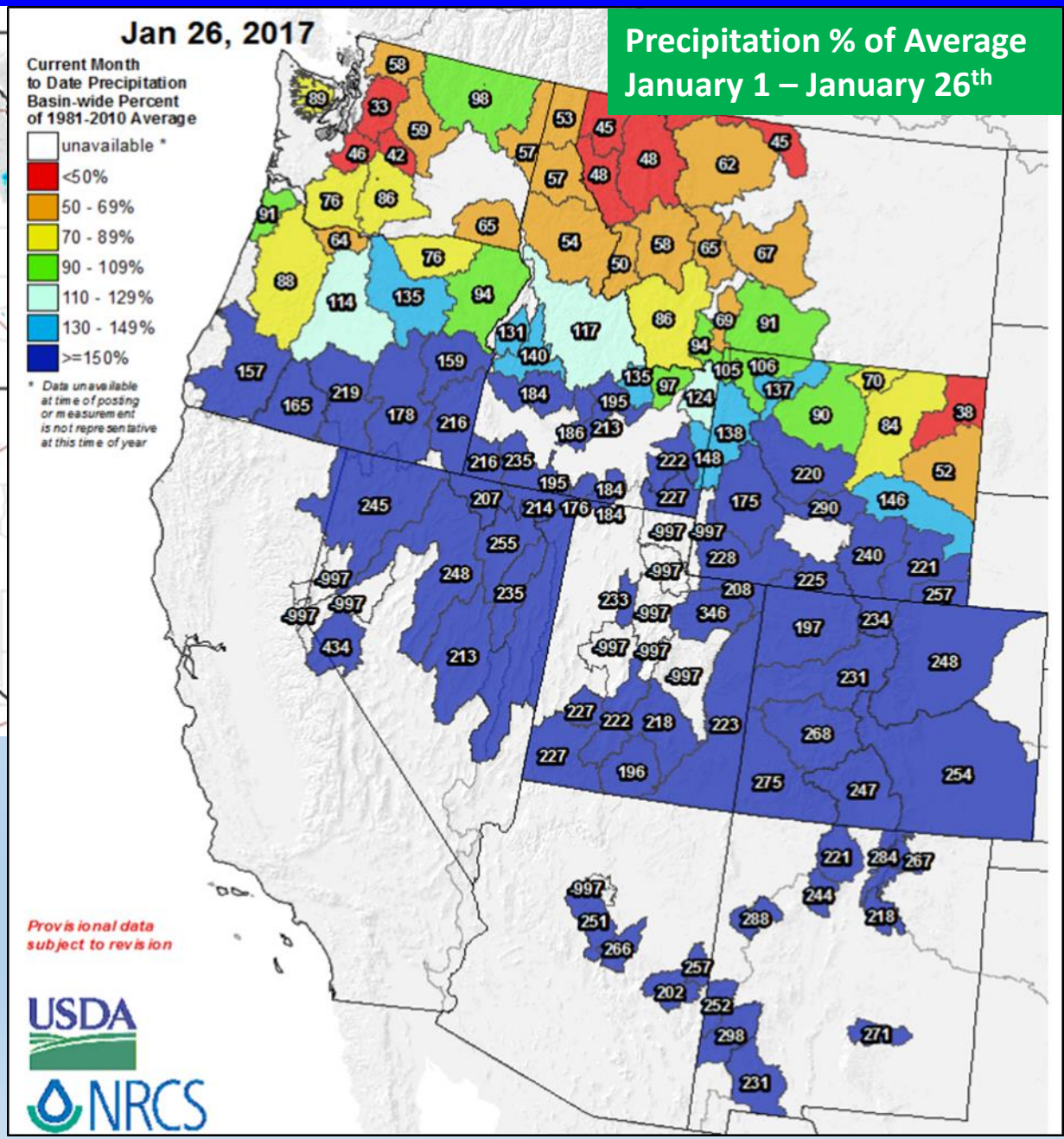
January Precipitation Pattern

Radar image from NWS on Jan 18, 2017

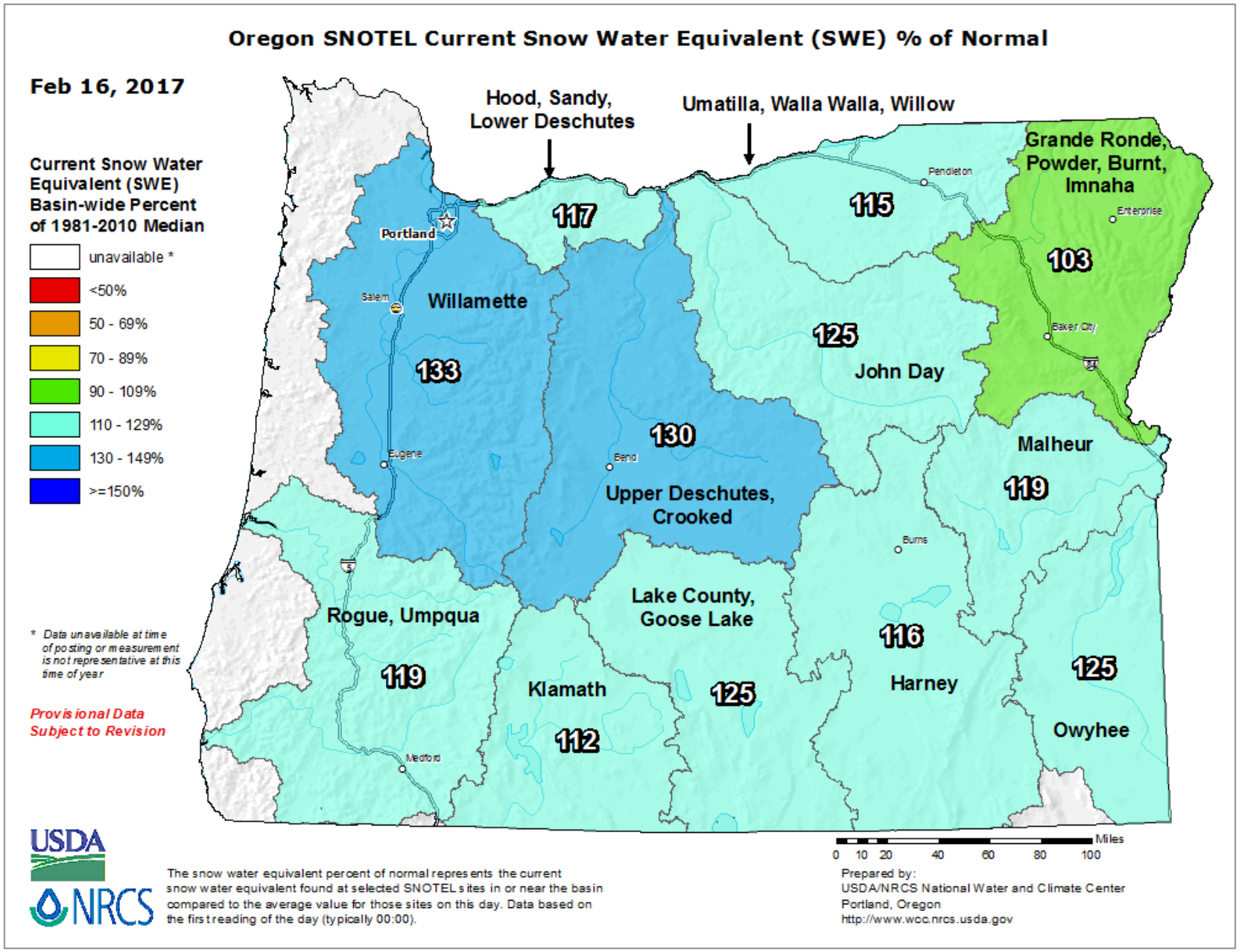


Storm Track Focused on SW Corner of State

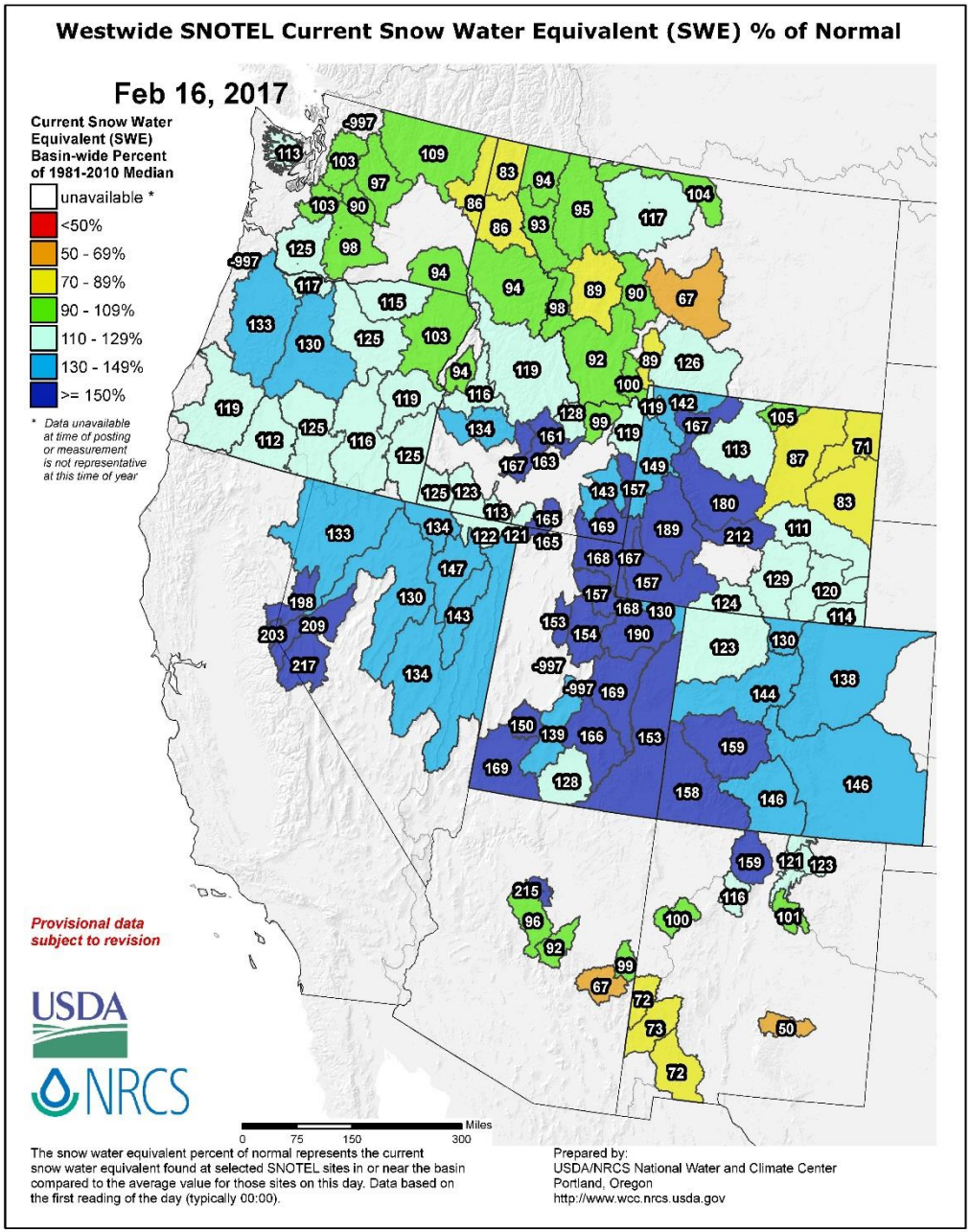
Precipitation % of Average
January 1 – January 26th



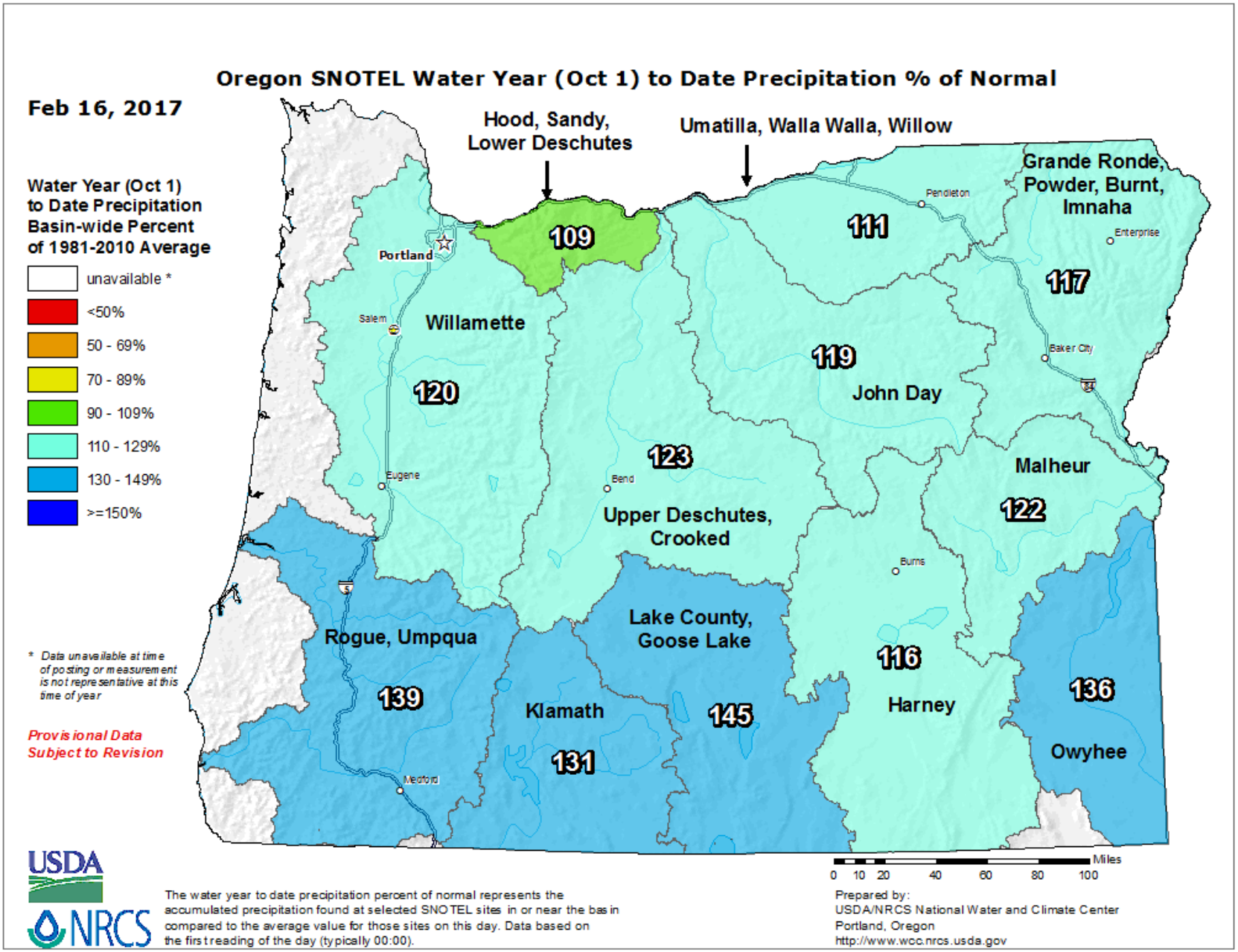
February 16, 2017 Snowpack



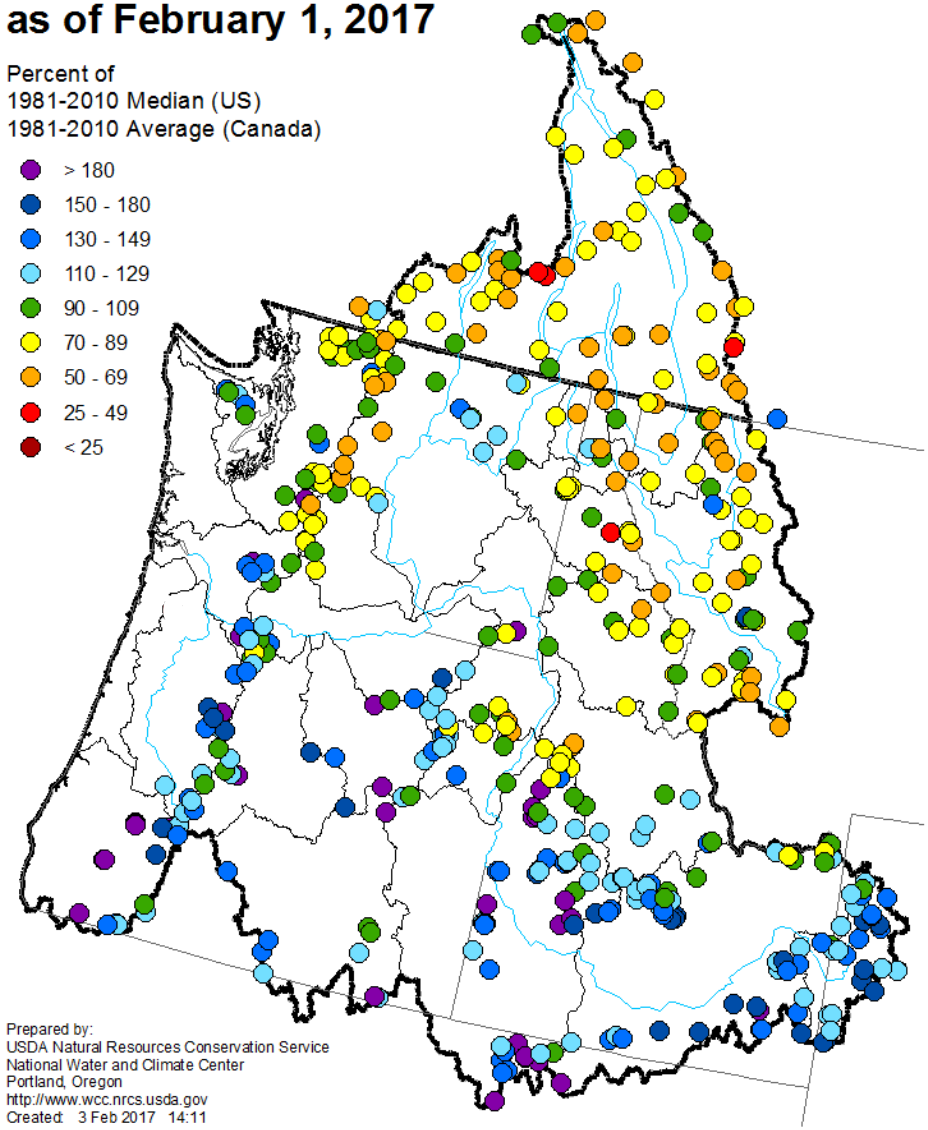
West-Wide Snowpack – February 16, 2017



February 16, 2017 Water Year Precipitation

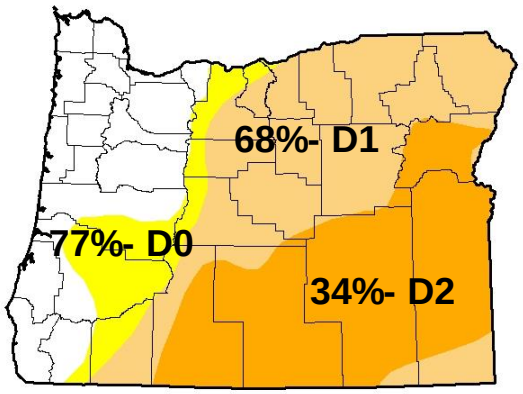


February 1, 2017 – Streamflow Volume Forecasts 50% Probability



U.S. Drought Monitor

Oregon



February 16, 2016

(Released Thursday, Feb. 18, 2016)
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	22.58	77.42	67.55	33.96	0.00	0.00
Last Week 2/9/2016	16.88	83.12	74.55	33.96	0.00	0.00
3 Months Ago 11/17/2015	0.00	100.00	98.45	91.57	60.69	0.00
Start of Calendar Year 12/29/2015	14.52	85.48	80.45	65.33	39.55	0.00
Start of Water Year 9/29/2015	0.00	100.00	100.00	100.00	67.29	0.00
One Year Ago 2/17/2015	14.22	85.78	82.29	44.95	33.71	0.00

Intensity:

- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

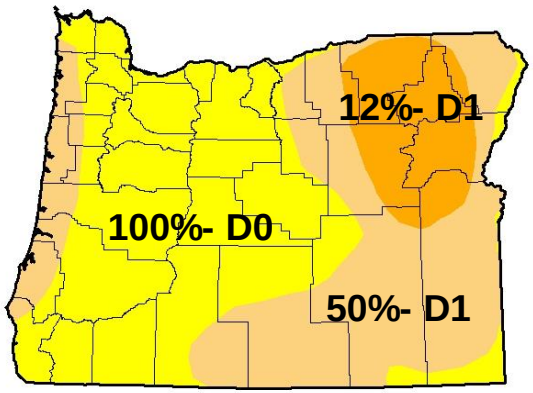
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author:
Eric Luebehusen
U.S. Department of Agriculture

http://droughtmonitor.unl.edu/

U.S. Drought Monitor

Oregon



October 4, 2016

(Released Thursday, Oct. 6, 2016)
Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.00	100.00	50.28	12.30	0.00	0.00
Last Week 9/27/2016	0.00	100.00	50.59	12.30	0.00	0.00
3 Months Ago 7/5/2016	0.00	100.00	49.75	0.00	0.00	0.00
Start of Calendar Year 12/29/2015	14.52	85.48	80.45	65.33	39.55	0.00
Start of Water Year 9/27/2016	0.00	100.00	50.59	12.30	0.00	0.00
One Year Ago 10/6/2015	0.00	100.00	100.00	100.00	67.29	0.00

Intensity:

- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author:
Brian Fuchs
National Drought Mitigation Center

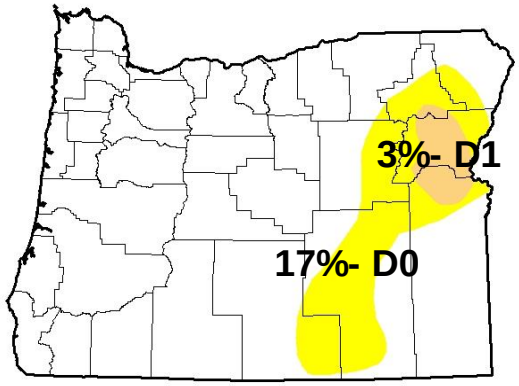
http://droughtmonitor.unl.edu/

D0 = Abnormally Dry (Yellow)
D1 = Moderate Drought (Tan)
D2 = Severe Drought (Orange)

D3 = Extreme Drought (Red)
D4 = Exceptional Drought (Brown)

U.S. Drought Monitor

Oregon



February 14, 2017

(Released Thursday, Feb. 16, 2017)
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	82.99	17.01	2.98	0.00	0.00	0.00
Last Week 2/7/2017	82.99	17.01	2.98	0.00	0.00	0.00
3 Months Ago 11/15/2016	56.44	43.56	23.22	2.63	0.00	0.00
Start of Calendar Year 1/3/2017	65.31	34.69	5.29	0.00	0.00	0.00
Start of Water Year 9/27/2016	0.00	100.00	50.59	12.30	0.00	0.00
One Year Ago 2/16/2016	22.58	77.42	67.55	33.96	0.00	0.00

Intensity:

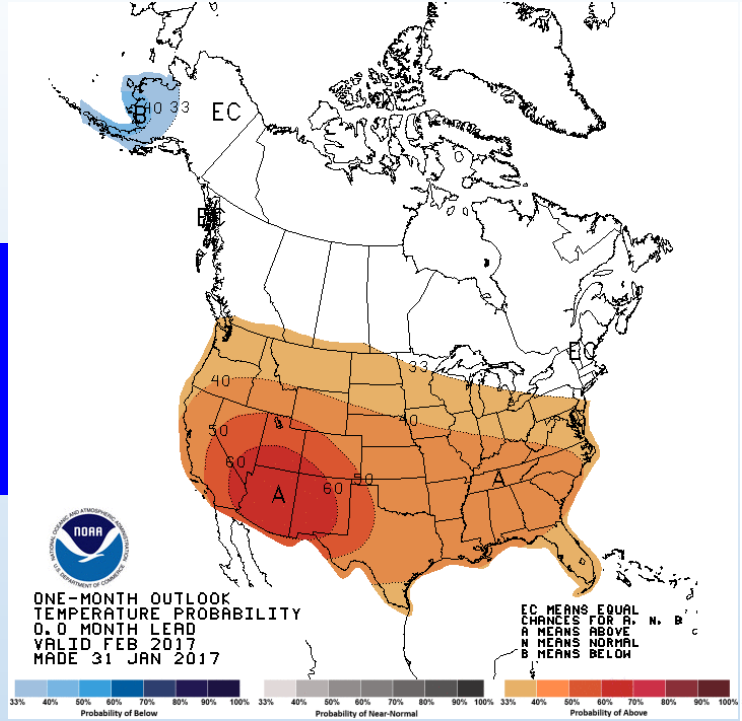
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

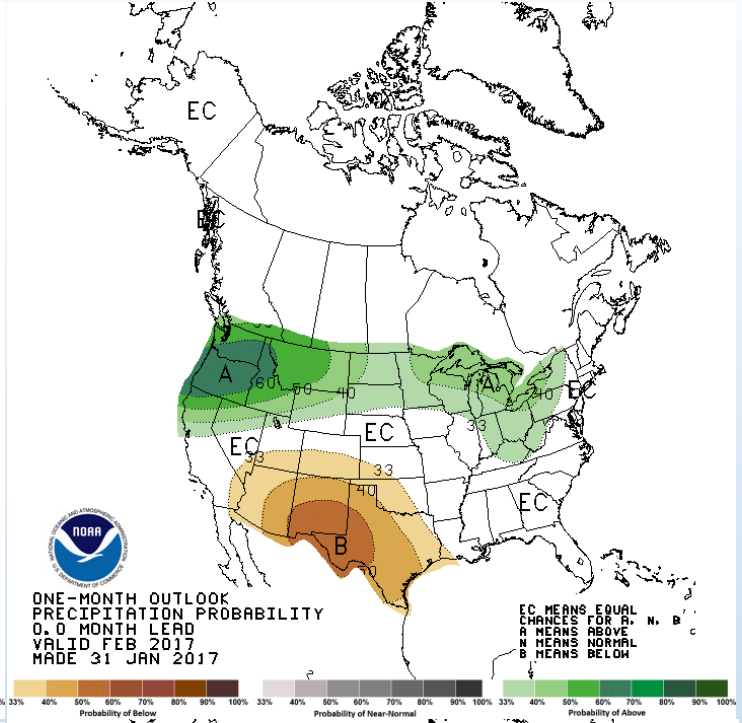
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author:
Jessica Blunden
NCEI/NOAA

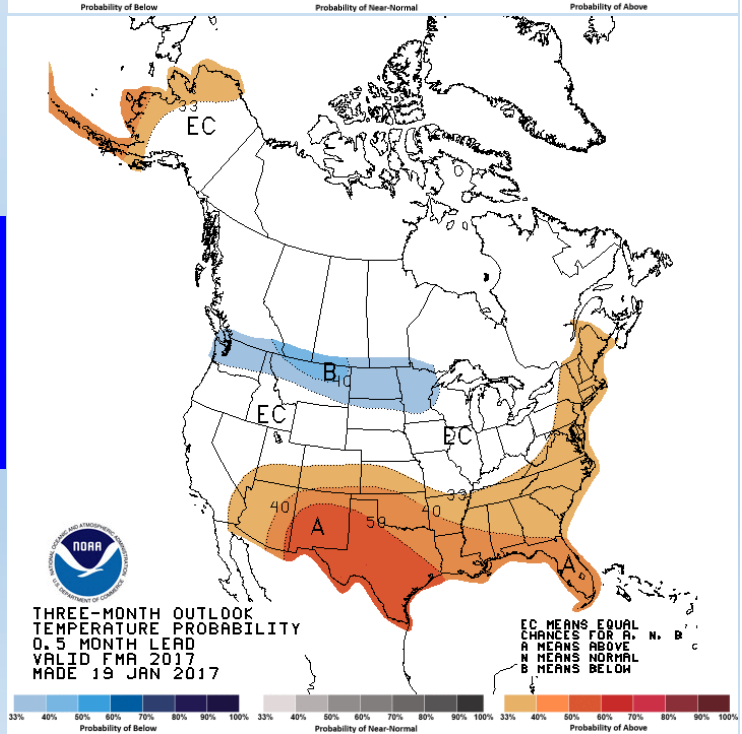
http://droughtmonitor.unl.edu/

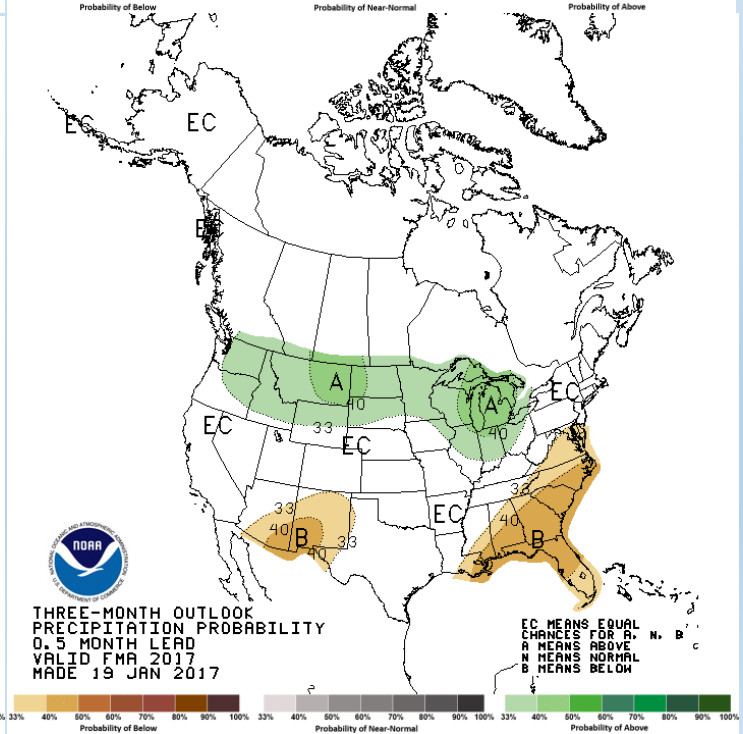
1-Month Forecast February 2017



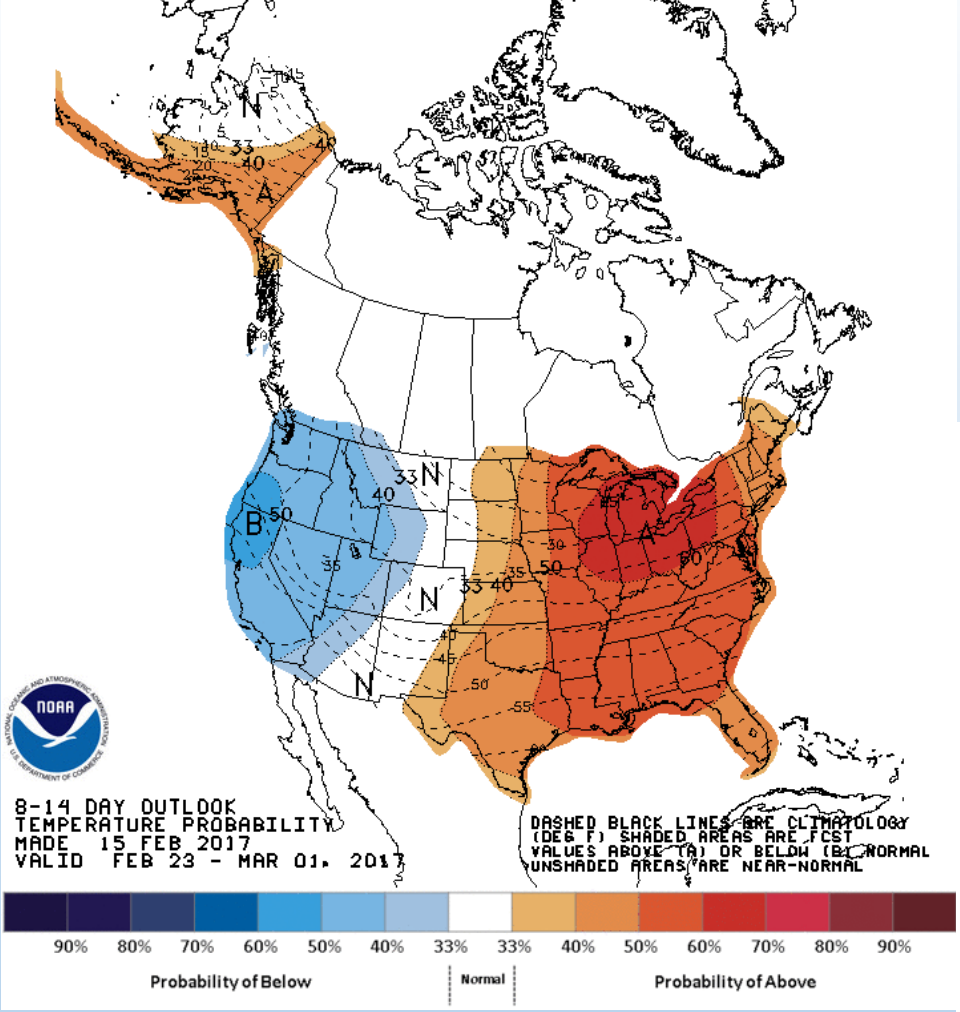


3-Month Forecast F-M-A 2017

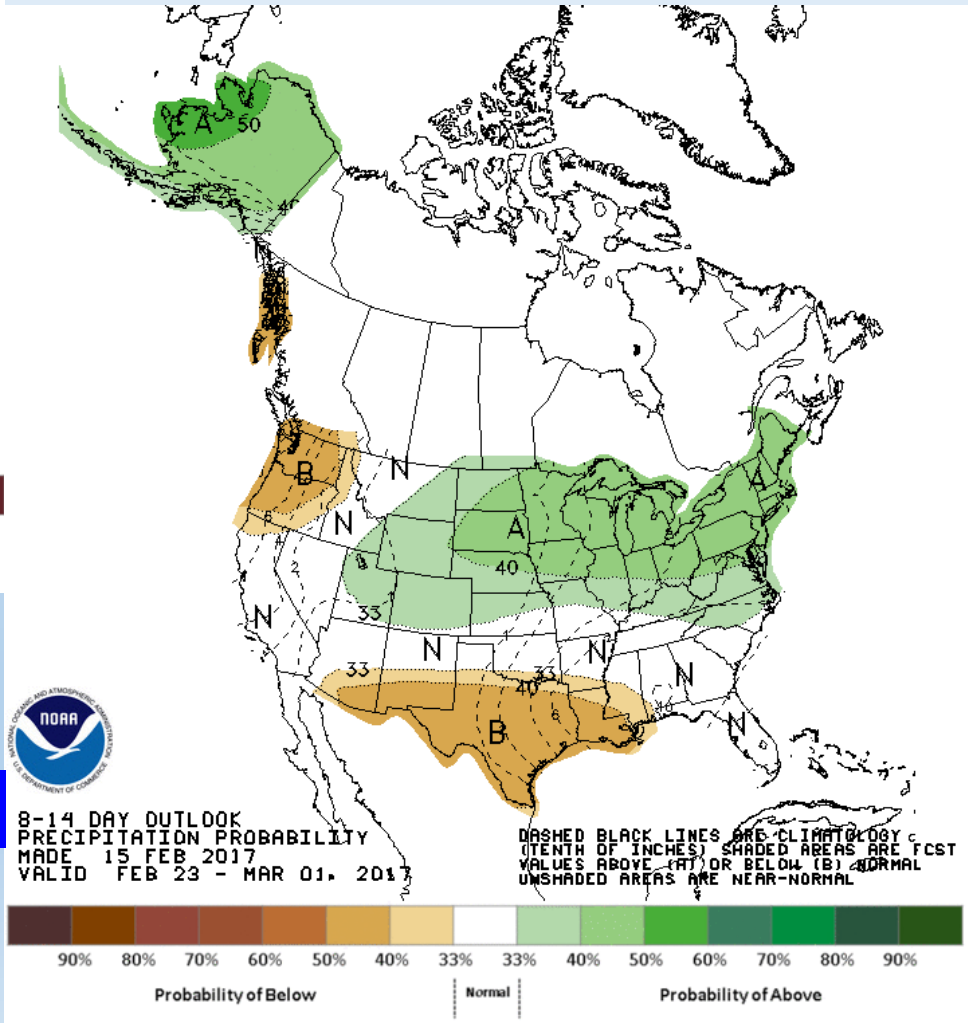




8-14 day CPC Temp Forecast



8-14 day CPC Precip Forecast



NRCS staff from Union, Baker, and Malheur Counties met to discuss implications of the low elevation snowpack that has accumulated and remained in place this winter. Concerns of what could transpire if a rapid warming or rain-on-snow event occurred. Field crews mobilized 02/07 – 02/09 to measure snow at certain locations mainly to determine water content and depth.

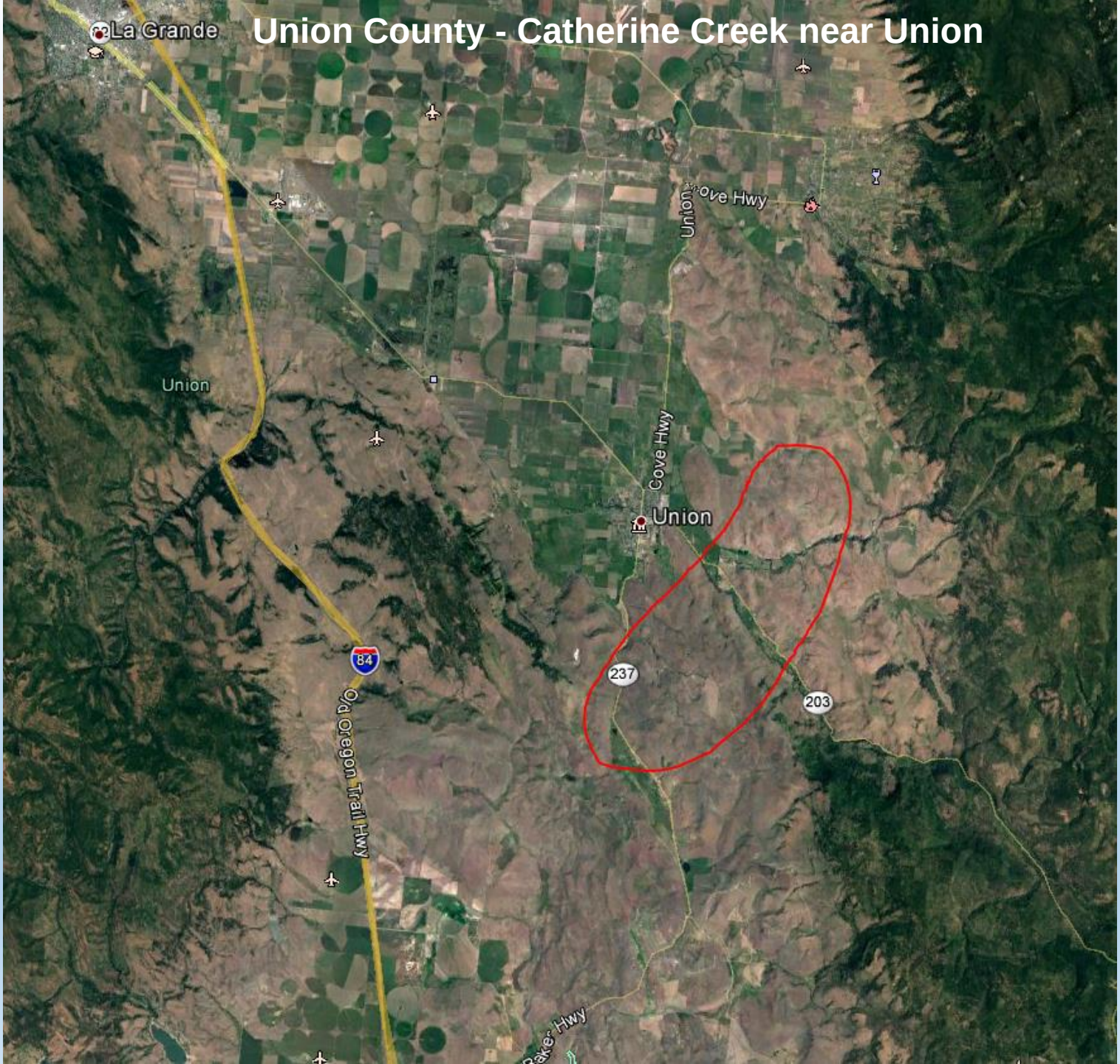
National Weather Service Offices in Pendleton and Boise, as well as local County Emergency Managers, and both were asked:

1) Are there certain areas (cross sections of tributaries, areas where NWS has recorded historic flooding, etc.) where we should sample to identify impacts that would assist NWS flood forecasting or predictability?

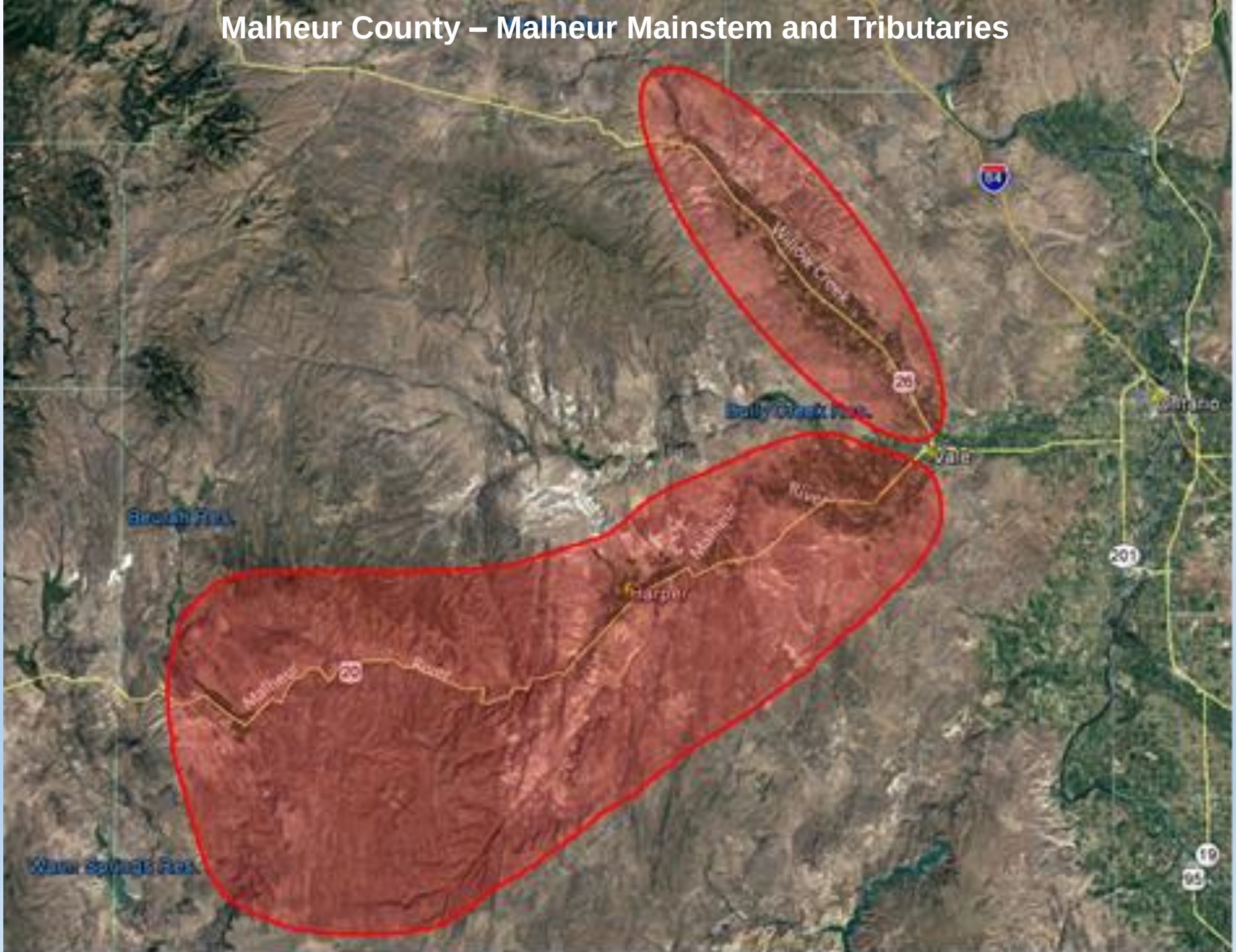
2) Is there anything else we could identify/measure (photos or other data collection) that would assist your efforts?

Effort was one-time, quick snapshot of conditions, not meant to be a replication of snow course or SNOTEL monitoring in terms of long-term data records and sampling at pre-specified locations. NWS was pleased and responded immediately with request for specified target areas, including photo documentation of sampled areas.

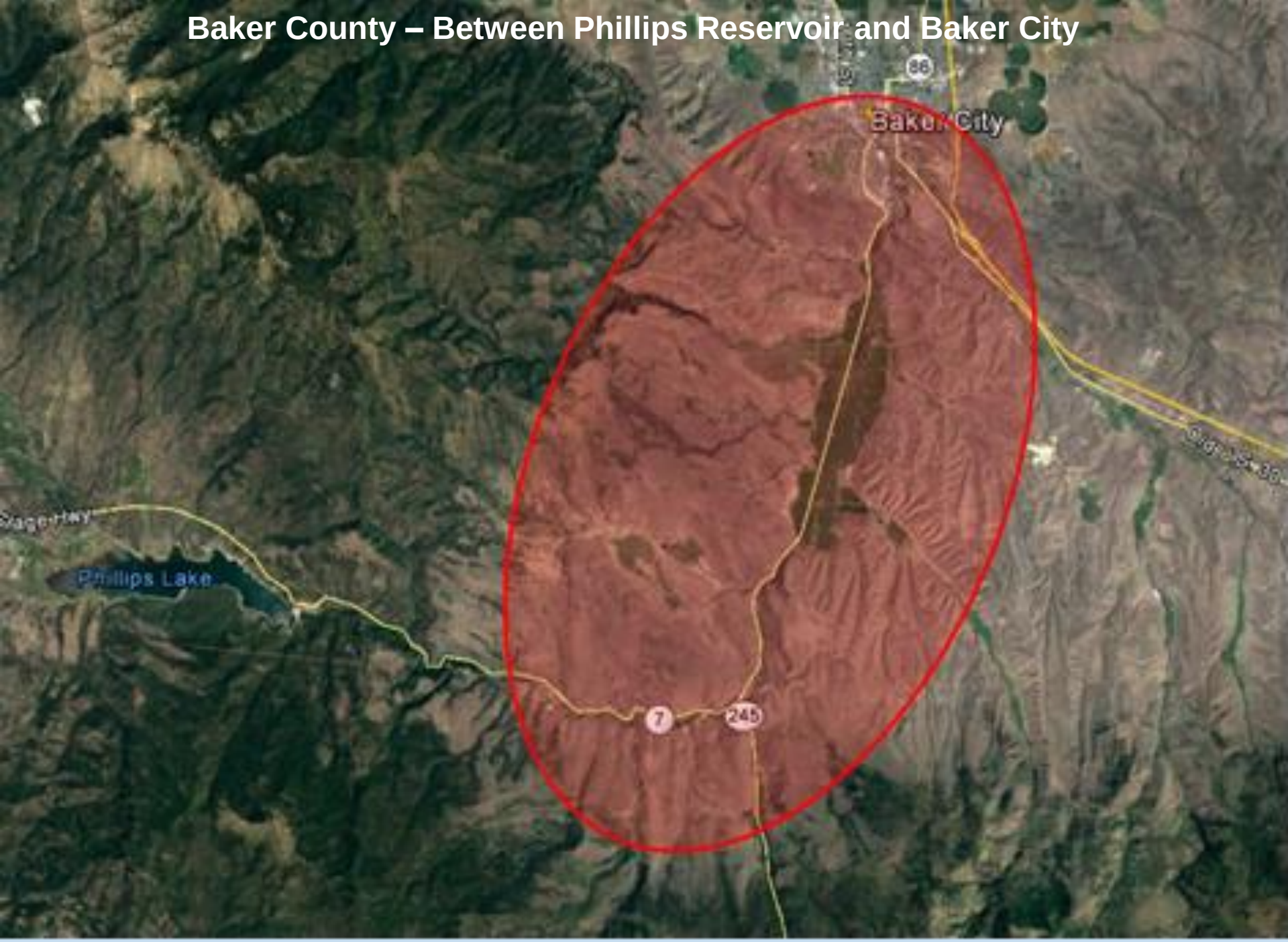
Union County - Catherine Creek near Union



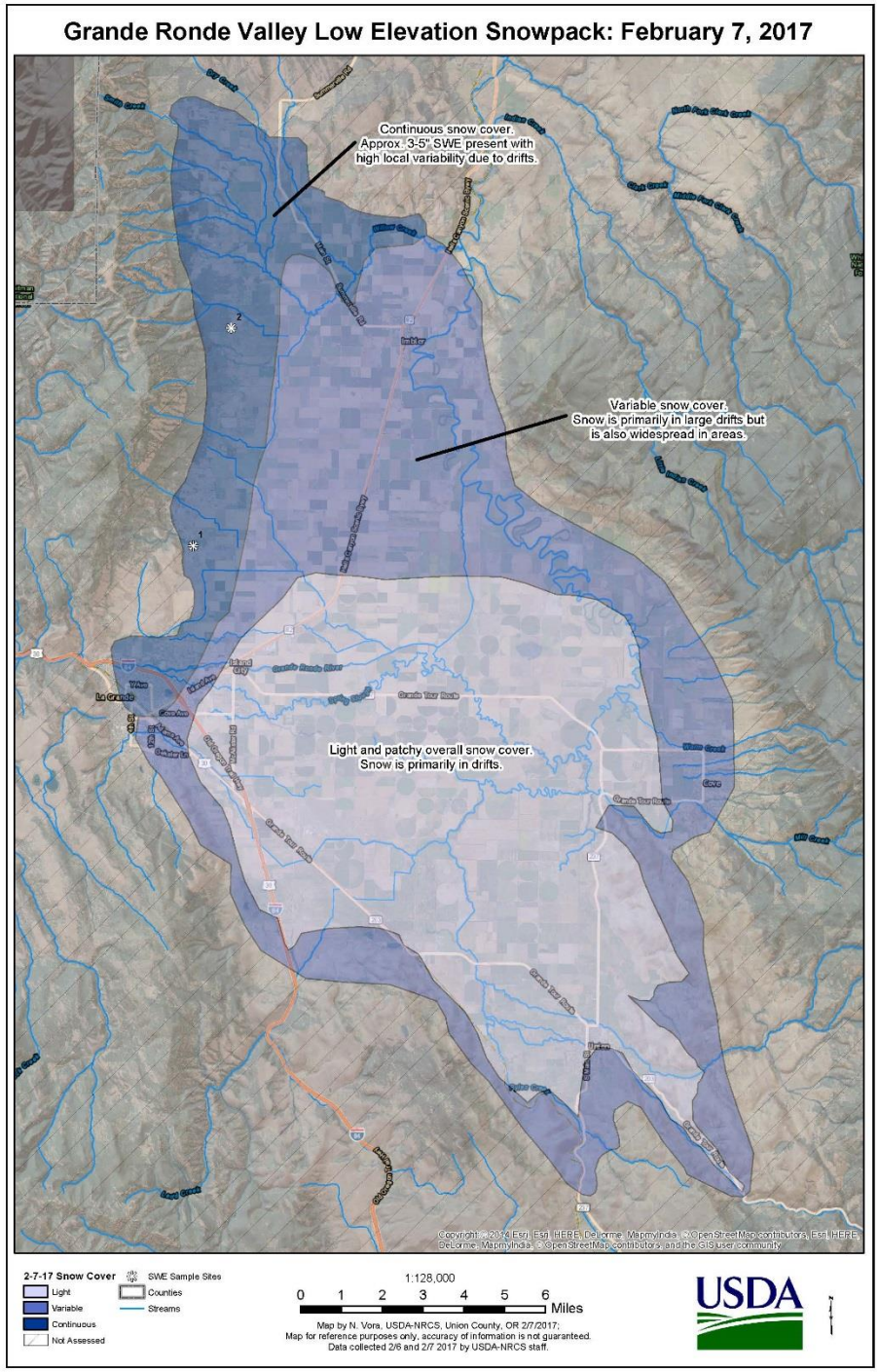
Malheur County – Malheur Mainstem and Tributaries

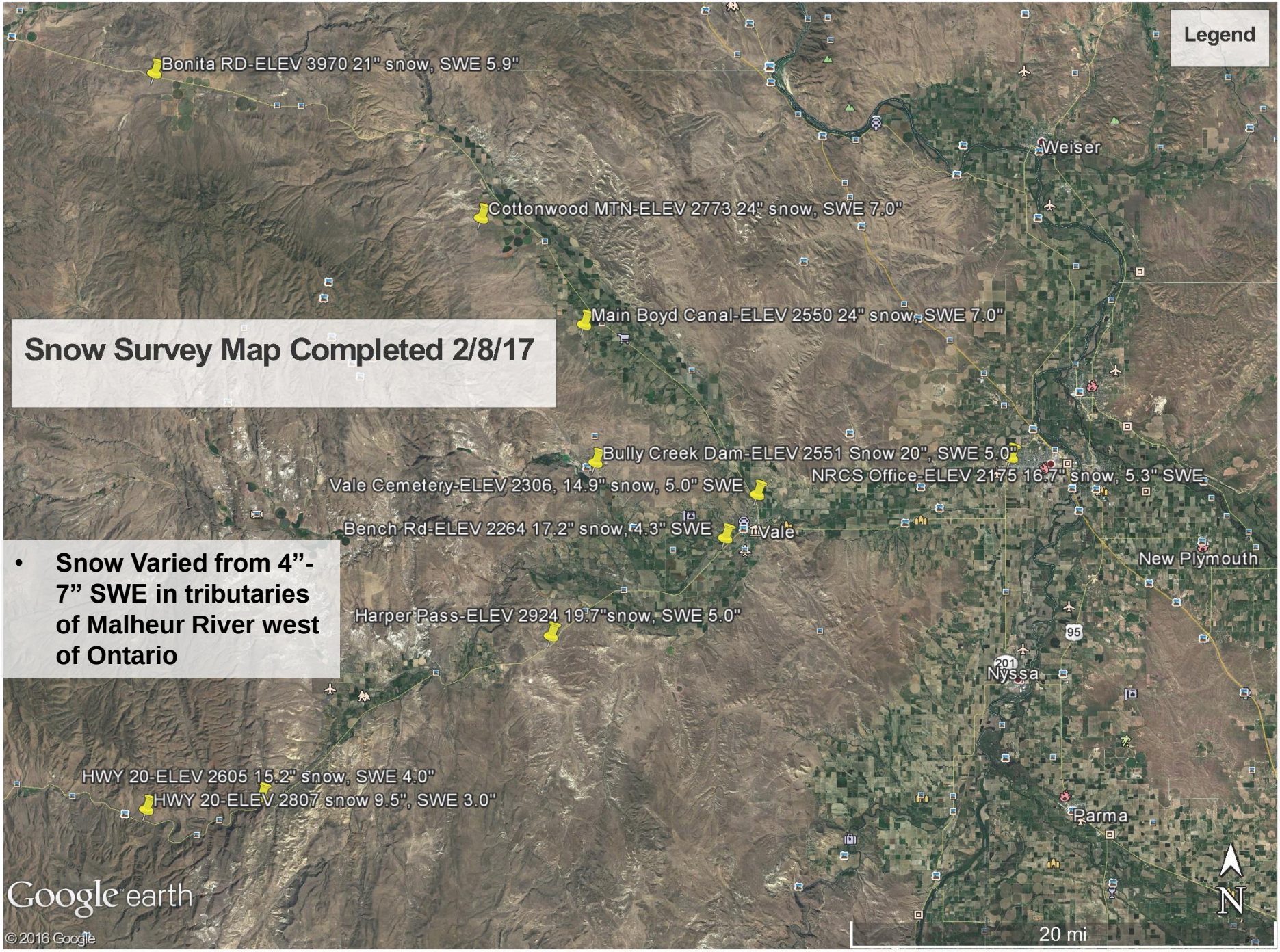


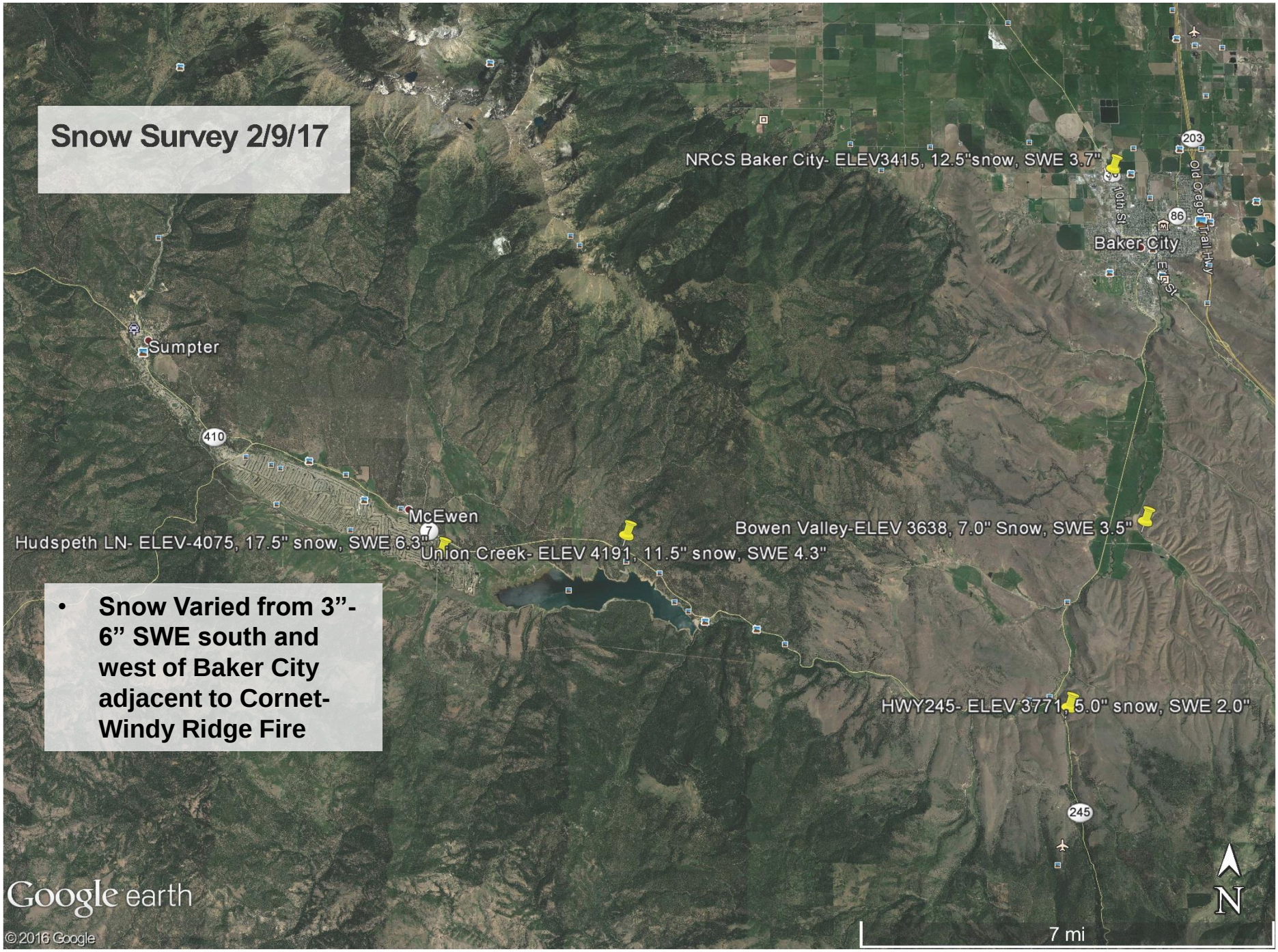
Baker County – Between Phillips Reservoir and Baker City



- **Snow Varied from 3”-5” SWE near Elgin in north county**
- **1”-3” in areas north of La Grande**
- **Light and Patchy from La Grande to Union**




Legend
Bonita RD-ELEV 3970 21" snow, SWE 5.9"
Weiser
Cottonwood MTN-ELEV 2773 24" snow, SWE 7.0"
Main Boyd Canal-ELEV 2550 24" snow, SWE 7.0"
Snow Survey Map Completed 2/8/17
Bully Creek Dam-ELEV 2551 Snow 20", SWE 5.0"
NRCS Office-ELEV 2175 16.7" snow, 5.3" SWE
Vale Cemetery-ELEV 2306, 14.9" snow, 5.0" SWE
Bench Rd-ELEV 2264 17.2" snow, 4.3" SWE
Vale
New Plymouth
• Snow Varied from 4”-7” SWE in tributaries of Malheur River west of Ontario
Harper Pass-ELEV 2924 19.7"snow, SWE 5.0"
95
201
Nyssa
HWY 20-ELEV 2605 15.2" snow, SWE 4.0"
HWY 20-ELEV 2807 snow 9.5", SWE 3.0"
Parma
Google earth
© 2016 Google
N
20 mi


Snow Survey 2/9/17
NRCS Baker City- ELEV3415, 12.5"snow, SWE 3.7"
Baker City
Sumpter
McEwen
Hudspeth LN- ELEV-4075, 17.5" snow, SWE 6.3"
Union Creek- ELEV 4191, 11.5" snow, SWE 4.3"
Bowen Valley-ELEV 3638, 7.0" Snow, SWE 3.5"
HWY245- ELEV 3771, 5.0" snow, SWE 2.0"
• Snow Varied from 3”-6” SWE south and west of Baker City adjacent to Cornet-Windy Ridge Fire
Google earth
© 2016 Google
7 mi
N

North Fork John Day River near Monument – 02/05/2017

North Fork John Day River near Monument – 02/06/2017


Outside Vale – 02/08/2017

Geiser Grand Hotel – Baker City – 02/06/2017

Thank you!

Questions?

USDA Oregon Technical Advisory Committee
February 16, 2017

NRCS hydrologists sample low elevation snow in the Owyhee Basin where mountain snowpack has already surpassed its normal annual peak.

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